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Psychological distress in medical patients seeking ED care for somatic reasons: results of a systematic literature review

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ABSTRACT

Objectives The aim of this systematic literature review is to investigate (A) currently used instruments for assessing psychological distress, (B) the prevalence of psychological distress in medical emergency department (ED) patients with acute somatic conditions and (C) empirical evidence on how predictors are associated with psychological distress.

Methods We conducted an electronic literature search using three databases to identify studies that used validated instruments for detection of psychological distress in adult patients presented to the ED with somatic (non-psychiatric) complaints. From a total of 1688 potential articles, 18 studies were selected for in-depth review.

Results A total of 13 instruments have been applied for assessment of distress including screening questionnaires and briefly structured clinical interviews. Using these instruments, the prevalence of psychological distress detected in medical ED patients was between 4% and 47%. Psychological distress in general and particularly depression and anxiety have been found to be associated with demographic factors (eg, female gender, middle age) and illness-related variables (eg, urgency of triage category). Some studies reported that coexisting psychological distress of medical patients identified in the ED was associated with physical and psychological health status after ED discharge. Importantly, during routine clinical care, only few patients with psychological distress were diagnosed by their treating physicians.

Conclusions There is strong evidence that psychological distress is an important and prevalent cofactor in medically ill patients presenting to the ED with harmful associations with (subjective) health outcomes. To prove causality, future research should investigate whether screening and lowering psychological distress with specific interventions would result in better patient outcomes.

INTRODUCTION

Patients presenting with somatic problems to the emergency department (ED) may experience this as a critical life event associated with emotional and physical reactions ultimately resulting in considerable psychological distress.

ED admission: a critical life event

Holmes and Rahe's[1] social readjustment scale showed that adverse physical health conditions such as personal injury or illness are rated as the sixth highest stressful life event. Moos and Schäfer[2] suggest that a serious physical illness could be understood as a life crisis and the vivid confrontation with a severe physical illness can have profound and lasting psychological consequences. The potency of the illness crisis stems from the typically sudden and unexpected onset and the ultimate threat to an individual's life and well-being.

Suffering from an acute medical condition in the ED may have a direct negative effect on patient's psychological and physical well-being—beyond the acute medical condition per se. Therefore, these patients may experience acute distress in the ED without having any formal diagnosis of a psychological disorder. On the other hand, medical patients presenting with an acute somatic condition and psychological distress may also suffer from psychological comorbidities. Importantly, during busy ED times, one may assume that most physicians focus their limited resources mainly to the somatic medical condition, thereby neglecting acute and general psychological conditions.

Definition of psychological distress

Psychological distress can be summarised as an emotional suffering, a negative psychological reaction to threats of personal life goals. These reactions involve a diversity of affective and cognitive aspects such as fear, hopelessness, sadness, anxiety and frustration.[3] Ridner[4] proposed that psychological distress is a unique discomforting, emotional experience in response to a specific stressor or demand that causes either temporary or permanent harm. However, to this day, there is an ongoing debate in the literature in terms of conceptualisation of psychological distress.[5 6] There is a lack of distinction between distress as a natural response of non-disordered people to stressful conditions and distress as a psychological dysfunction. Horwitz[6] assumes that psychological distress is viewed as a transient phenomenon, a 'normal' emotional reaction to a stressor. The distressing state disappears if the stressor is absent or can be effectively managed. Drapeau *et al*[7] noticed that the determining characteristics of psychological distress are the exposure to a stressful event that threatens the physical and mental health as well as the ineffective coping with this stress event and the emotional consequences of the ineffective coping. Alternatively, psychological distress is viewed as the manifestation of symptoms of psychiatric disorders. Therefore it has been described as an emotional suffering consisting of two major forms, symptoms of depression and anxiety.[5 8]

Only a few investigations have focused on elucidating the prevalence of psychological distress in

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ED patients. Herein, our aim is to provide a systematic review of the literature on the detection of psychological distress in medical patients seeking ED care for somatic reasons.

METHODS

Study aims

The aims of the review were to determine (A) what instruments have been used for assessing psychological distress in patients in the ED, (B) to what extent are medical ED patients with somatic problems psychologically distressed, (C) what is the empirical evidence of predictors associated with psychological distress in the ED, and (D) where are the important gaps in the current literature.

Data sources and search methodology

To address these research questions, we performed a systematic literature review to identify studies that used validated instruments for detection of psychological distress in adult patients presenting to the ED with somatic (non-psychiatric) complaints. Empirical articles were selected after an electronic search in MEDLINE, Web of Knowledge and PsychINFO. The present report was prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.[8] For the search, the following keywords related to the review subject combined with standard MeSH or Thesaurus terms were used: 'psychological distress', 'psychological stress', 'emotional distress', 'affective distress', 'negative affect', 'emergency patients', and 'emergency department'.

Study selection

A total of 1688 references were identified in an electronic search of the three databases MEDLINE, Web of Knowledge and PsychINFO. Duplicated references were removed and 1224 articles remained. Out of these, 786 references with no relevant relation to the main topic of psychological distress in ED patients were excluded. In a first stage, all titles and abstracts of the potentially relevant articles (n=438) were excluded if they met the following criteria: (A) non-adult participants, (B) patients who presented to the ED with psychiatric complaints, (C) participants who were defined as injured or surgical, (D) studies that focused only on a specific diagnosis group or medical symptom, and (E) the ED staff as participants. In a second step, all remaining relevant studies (n=49) were further evaluated in a full-text selection. The included studies were assessed by the following criteria: (A) non-interventional studies, (B) studies reporting prevalence rate, (C) no mixed samples of accident and ED, (D) psychological distress assessed at the ED, and (E) original research studies. Finally, 17 articles were identified after full-text analysis. The entire search selection for the selected studies is presented in a flow diagram in figure 1.

Data analysis

Quantitative results of each study according to prevalence rate of psychological distress and additional reported findings were retrieved. We extracted qualitative data (instruments used, patient population) as well as quantitative data (association between distress measured with different instruments and patient outcomes). We also performed a quality and bias assessment looking at eligibility, measurement of outcome and confounding.

We initially planned on doing a meta-analysis to investigate pooled estimates. Given the small number of studies reporting quantitative data on risk factors and the large heterogeneity in regard to instruments used and outcomes assessed, we decided not to pool data as no homogenous groups could be formed.

RESULTS

Study characteristics

After searching the different databases, we identified 17 studies which were published in 10 different countries and investigated a total of 9993 participants.[9–25] The majority of the studies were conducted in the USA (n=11) followed by Australia (n=2) and Italy (n=1). Three articles were multinational studies, one of them was conducted in France and Belgium and the other two were carried out in Mexico, Argentina, Columbia, Chile and Brazil. Most of the selected studies focused on adult ED patients in general, whereas five studies focused on older patients only. Online supplementary table S1 gives a summary of the different included studies. The quality and bias assessment indicated high risk for most of the studies (detailed results are presented in online supplementary table S2).

Instruments assessing psychological distress in the ED

Generally, most studies investigating the prevalence of psychological distress focused mainly on the detection of psychiatric disorders, particularly depression and anxiety.[26–28] However, there are also studies which assessed psychological distress in a broader sense. These studies measured the major symptoms of depression and anxiety, and include social dysfunction and psychosomatic symptoms.[29 30] The different instruments that were used in the identified studies for this review detecting psychological distress in medical ED patients are summarised in table 1.

Most of these instruments were in fact screening instruments. All instruments were previously used to detect psychological distress in ED patient populations (for details see online supplementary table S1). Two of them are structured diagnostic interviews such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the Mini-International Neuropsychiatric Interview (MINI.). Overall, the instruments differ substantially in terms of their length (they vary between 1 and 30 questionnaire items). Also, instruments had different purposes and were developed either to detect depression and anxiety, depression only, psychological distress in general or for a broader clinical assessment (psychiatric disorders). Additionally, there is a wide variability in regard to the time window used to screen, that is, some instruments ask for symptoms in general, during the last month, during the last few weeks or within the past week. Importantly, none of the instruments focus on the current emotional state at the ED, but rather the distress situation in retrospect. Thus, the acute distress situation is not represented in these studies. All of the screening instruments have proposed cut-off scores for discrimination between clinical cases from non-cases which show good validities (see table 1).

Prevalence of psychological distress in ED patients

We found a broad range of prevalence rates between 4% and 47% of psychological distress depending on the instrument used (see online supplementary table S1). Marchesi *et al*[19] investigated the prevalence of general psychological distress in the ED setting. In this study, 47% of ED patients were identified as psychologically distressed and show a risk of having a psychiatric disorder. Three other studies focused on the detection of psychiatric disorders. Of these, two studies used the same diagnostic instrument (MINI) and showed a high prevalence rate of any diagnosis of a psychiatric disorder between 42% and 45% in medical patients presenting to the ED with acute somatic

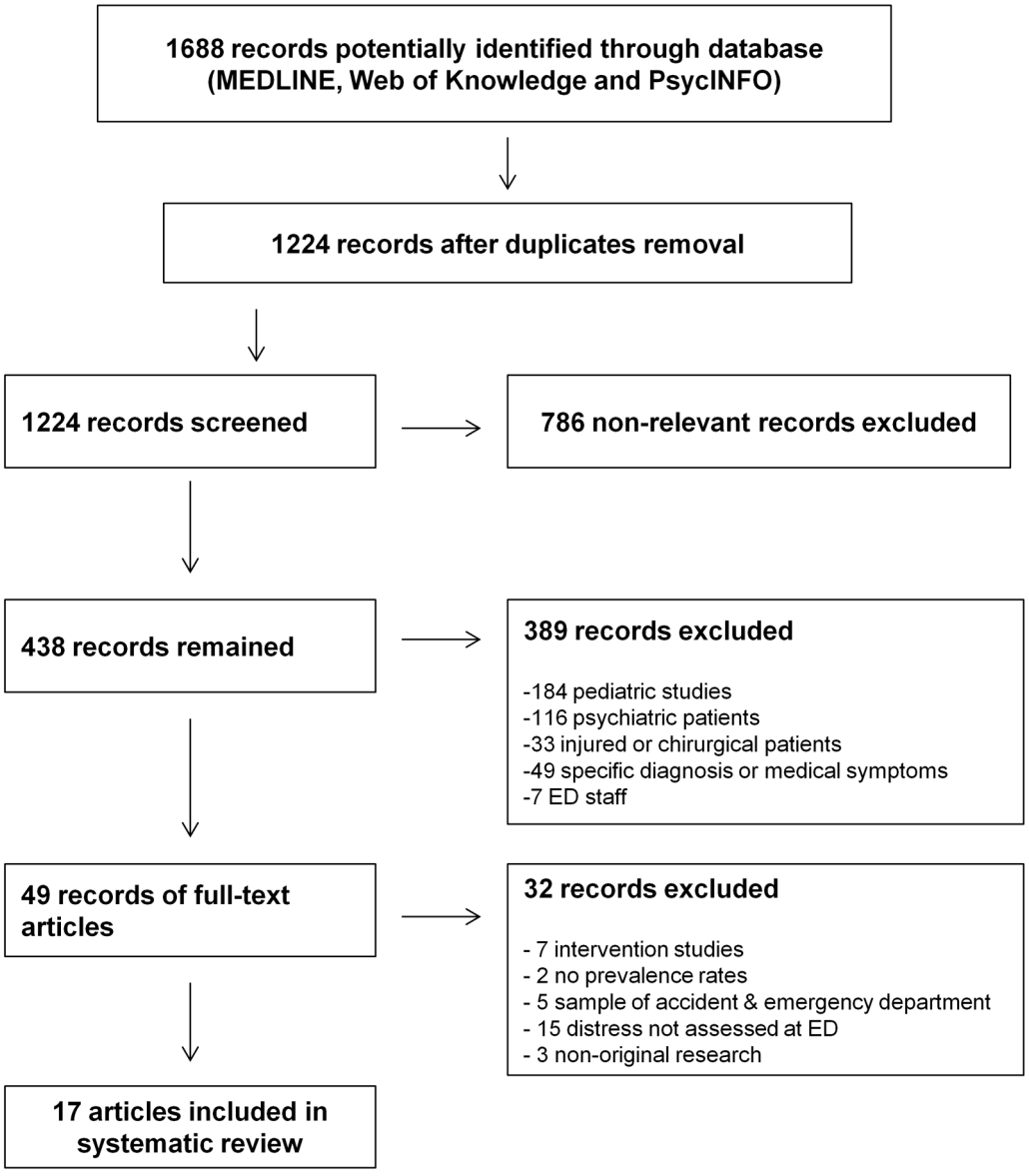

Figure 1 Search strategy flow diagram. ED, emergency department.

conditions.[13 19] Another study using a different diagnostic instrument such as the DSM-III-R checklist found a lower prevalence rate, namely 28% of psychiatric disorders in medical ED patients.[20] These three studies suggest that depressive disorders were the most frequent distributed psychiatric disorders, followed by anxiety disorders and others such as alcohol abuse. However, the study by Marchesi *et al*[19] detected that anxiety disorders were diagnosed more frequently than depressive disorders. Apart from these mentioned studies, most of the studies considered in this review investigated psychological distress more specifically, mainly with a focus on screening for anxiety and depression. Studies found prevalence rate for depression between 6% and 55%.[9 10 12 14–18 21–25] Symptom of anxiety was found to be ranged between 10% and 47%.[9 17 23 25] Other psychological symptoms were found for bipolar disorders. Two studies reported a frequency between 4% and 5% of bipolar disorders in medical patients in the ED.[10 11] As mentioned earlier an important finding of this review was that no study could be identified investigating the magnitude of acute psychological distress using standardised instruments.

Predictors associated with psychological distress at ED

Of all the selected studies in this review, 10 studies found several predictors of psychological distress (see online supplementary table S3). These variables include sociodemographic characteristics such as gender, age, and socioeconomic and marital statuses and illness-related variables. Marchesi *et al*[19] reported that female ED patients had a higher level of general psychological distress than male ED patients. This was also true for specific psychological distress such as depression and anxiety in most studies.[12 18 19 23] Higher frequencies in women were also found for symptoms of anxiety.[9 23] Furthermore, psychologically distressed ED patients were more likely to be separated, divorced or widowed than non-psychologically distressed ED patients.[19] Other studies found that depressed ED patients had less income, a lower level of education and were found to be more likely middle-aged compared with non-depressed ED patients.[10 12 18 24]

Besides sociodemographic characteristics, higher urgency of triage[17] and several illness-related variables were also found to be associated with patients' distress at ED such as chronic

Table 1 Instruments assessing psychological distress of medical patients in the emergency department

Instrument/reference	Description	Dimensions/items/time period/rating scale	Cut-off scores/categories	Quality criteria
Center for Epidemiologic Studies Depression Scale (CES-D)[31]	A self-report scale designed to measure depressive symptomatology in the general population	Depression 20 items Last week 4-point scale (0=rarely or none of the time, 3=most or all of the time)	Standard cut-off point of 16 and more suggesting current depression	There was a very high internal consistency and adequate test-retest repeatability
Depression screen[32]	Items assessing depressed mood and anhedonia Two questions based on the PRIME-MD	Depression 2 items Past month Dichotomous (0=no/1=yes)	A cut-off score of 1 and more identifies a positive screen for major depression	The depression screen showed in a patient population a sensitivity of 96%, a specificity of 57%, a negative predictive value of 98%, a positive predictive value of 33% and an area under the curve (AUC) of 0.82
Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV)[33]	A manual of a classification system including all recognised psychiatric disorders	Psychiatric disorders		
Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition, revised checklist[34]	A semi-structured diagnostic interview guiding for examinations covering symptoms and diagnoses as specified in DSM-III-R	Major psychiatric disorders	The DSM-III-R checklist, by diagnosis, symptom items in order presented in the DSM-III-R for 22 axis I diagnoses, including substance use disorders, and one axis II diagnosis, antisocial personality disorders (ASPD)	The DSM-III-R checklist showed to be a useful tool for routine diagnostic assessments[35]
General Anxiety Disorder Scale, 7-item (GAD-7)[36]	A self-reported scale developed from items of the DSM-IV and other existing anxiety scales	General anxiety disorder 7 items Last 2 weeks 4-point Likert scale (0=not at all, 3=nearly every day)	Cut-off score of 10 and more identifies a probable case of general anxiety disorder 4 categories of GAD-7 scores: 0–4, 5–9, 10–14 and 15 and greater representing minimal, mild, moderate and severe level of anxiety on the GAD-7	Internal consistency was α=0.92 On the basis of a primary care population, a cut-off score of 10 showed a sensitivity of 89% and a specificity of 82%
General Health Questionnaire, 30-Item (GHQ-30)[37]	A screening instrument for identifying minor psychiatric disorders in the general population and within community or non-psychiatric clinical settings such as primary care or general medical outpatients	Psychological distress 30 items Past few weeks Considers number of symptoms ('area' measure)	A total score higher than 4 identifies psychological distress	GHQ-30 total score higher than 4 showed a sensitivity of 91.4%, a specificity of 87% and an overall misclassification rate of 11%
Geriatric Depression Scale (GDS)[38]	To design a screening tool for rating depression in the elderly	Depression 30 items Past week Dichotomous (0=n /1=yes)	A cut-off score of 11 indicates depression	Provides a reliable and valid measure of geriatric depression with a high degree of internal consistency
Geriatric Depression Scale—Sort Form (GDS-SF)[39]	Derived from the original Geriatric Depression Scale Screening instrument for Depression in older persons	Depression 15 items In general Dichotomous (0=no/1=yes)	A cut-off score of 6 and more indicates depression	Based on an older primary care patient sample, internal consistency reliability was α=0.749 and the cut-off score of 6 showed a sensitivity of 81.45% and a specificity of 75.36%[40]
Hospital Anxiety and Depression Scale (HADS)[41]	A self-administered measure designed to detect symptoms of anxiety and depression in the setting of a hospital medical outpatient clinic	Anxiety and/or depression 14 items Past week 4-point Likert scale (0–3)	A scale score of 11 and more indicates clinically significant anxiety and/or depression Categories: 0–7 for non-cases, 8–10 for doubtful cases and 11 and more for definite cases	Correlations between psychiatric ratings and HADS scores: 0.70 for depression and 0.74 for anxiety
Koenig Scale (KS)[42]	Brief self-rated instrument for detection of major depression in medically ill, hospitalised patients	Depression 11 items In general Dichotomous (0=no/1=yes)	A cut-off score of 3 and more	Based on a male medical inpatient sample, the instrument showed 83% of sensitivity and 77% of specificity
Mini-International Neuropsychiatric Interview (MINI)[43]	A short structured diagnostic interview for DSM-IV and ICD-10 psychiatric disorders	Psychiatric disorders		The MINI succeeded to reliably and validly eliciting symptom criteria used in making DSM-III-R and ICD-10 diagnoses and showed a very good sensitivity and specificity

Continued

Table 1 Continued

Instrument/reference	Description	Dimensions/items/time period/rating scale	Cut-off scores/categories	Quality criteria
Mood Disorder Questionnaire (MDQ)[44]	A self-reported screening instrument for bipolar spectrum disorders	Mood disorder 13 items In general Dichotomous (0=no/1=yes) Additional item 1 Dichotomous (no / yes) Additional item 2 4-point scale (no problem to serious problem)	Cut-off score of 7 and more detects a DSM-IV diagnosis of any bipolar spectrum disorder The additional items must indicate 'yes' and 'moderate to serious'	Based on psychiatric outpatients a score ≥7 showed a sensitivity of 73% and a specificity of 90%
Patient Health Questionnaire, 9-item (PHQ-9)[45]	A self-administered depression module of the PRIME-MD, which scores each of the nine DSM-IV criteria	Depression 9 items Last 2 weeks 4-point Likert scale (0=not at all, 3=nearly every day)	A cut point of ≥10 indicates major depression Categories: 0–4, 5–9, 10–14, 15–19 and 20 or greater indicating minimal, mild, moderate, moderately severe and severe depression	Internal reliability was α=0.89 A cut point of 10 based on a primary care patient sample, the instrument showed a sensitivity of 88% and specificity of 88%

ICD-10, International Classification of Diseases, 10th Revision; PRIME-MD, Primary Care Evaluation of Mental Disorders.

medical conditions and comorbidity.[10 24] Furthermore, studies found that self-rated health state was related with patients' distress at ED.[18 21 22 24] Also, medical conditions such as asthma or arthritis/rheumatism presented at ED admission were related with patients' distress.[12 18]

In addition, psychological conditions such as bipolar disorders,[11] substance abuse, alcohol problems and tobacco use[10 12 18] were associated with distress. As online supplementary table S3 illustrates, most of these studies investigating predictors of psychological distress used univariate statistical analysis. Only a few studies were controlling for confounders.

Based on these findings, a risk model of variables related with psychological distress such as depression and anxiety in medical ED patients and their association on patients' outcomes can be proposed (see figure 2).

Detection of psychological distress in clinical practice

Our search found that different studies investigated the accuracy of ED physicians' detection of patients' psychological distress. Studies found low detection rates between 2% and 4% of diagnosed psychiatric disorders by their ED physicians.[13 19] In these studies, prevalence rates were found between 45% and 48%. Another study revealed a similar finding in terms of symptoms of depression which showed prevalence rate of 55%, but was identified by ED physicians only in 14% of the cases.[14] Additionally, two studies showed that ED physicians failed to detect clinical levels of depression in most of the depressed patients.[21–23]

SUMMARY, DISCUSSION, GAPS AND AREAS FOR FUTURE RESEARCH

The importance of psychological distress as an outcome-relevant cofactor in medical patients seeking ED care for a somatic condition remains somewhat undefined. Within this systematic review we identified several studies which used different validated instruments to assess psychological distress, mainly depression and/or anxiety, in ED patients measured within different time windows before ED admission. Overall, studies reported a relatively high prevalence of psychological distress affecting up to half of all ED patients, with however high fluctuations and heterogeneity among different studies and instruments used. Importantly, all studies focused on measurement of distress in the time prior to ED admission, but not the actual distress that was reported at the ED. Also, several studies found associations of distress with adverse patient outcomes. Whether there is a causal link, however, remains still undefined due to the lack of interventional trials.

The term 'psychological distress' contains depressive symptoms and other psychological conditions including anxiety, anger, fear, among others. Most studies identified by our search, however, focused mainly on depression. The prevalence of other psychological conditions and their association with outcome remains therefore, understudied.

Studies identified different predictors for psychological distress including female gender, middle age, marital status (separated, divorced or widowed) and a lower level of socioeconomic status as well as education. Also, acuity of presentation with higher triage category and high burden of medical diagnoses, particularly psychiatric comorbidities including substance abuse are also associated with psychological distress. Knowledge of these factors may help the clinician in the ED to identify patients at risk in whom a screening for psychological distress cold be warranted. Still, whether such a screening strategy

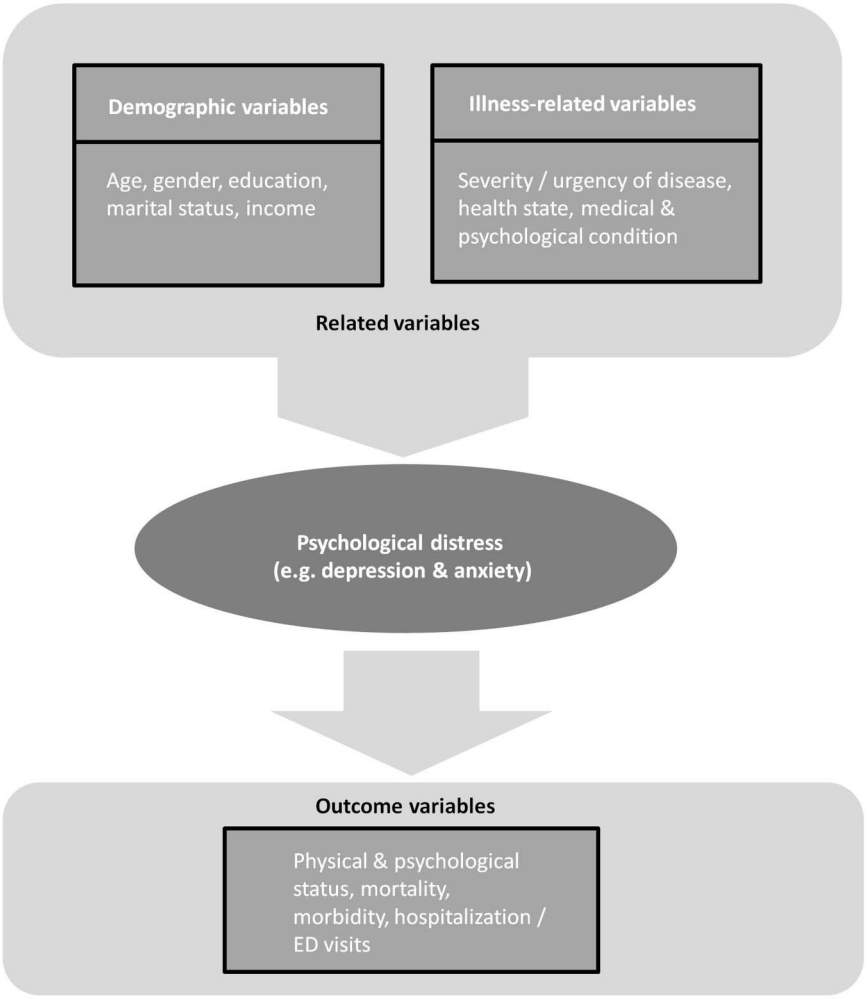

Figure 2 Model of psychological distress in medical emergency department (ED) patients, related variables and patient outcomes.

would result in improved patient outcomes remains unclear as interventional trials using specific strategies to reduce anxiety are lacking.

Several instruments exist for the detection of psychological distress with most of them being screening instruments and only few structured clinical Interviews. Despite the good validity of these instruments, they do not intend to diagnose patients and have not yet been validated against a gold standard for the ED setting.

Still, only few studies were able to look into the prevalence and extent of psychological distress across different patient populations. For instance, it is known that patients with chronic obstructive pulmonary disease are more vulnerable to psychological distress compared with patients with acute heart failure.[46 47] Differences in the extent of psychological distress among various diagnoses are not well investigated in ED patients and more studies are needed for future research. Furthermore, it would be interesting to better understand how the relationship of sociodemographic and/or illness-related variables and ED patients' distress differ across patient populations.

As a limitation, this review focuses specifically on medical patients but excludes studies evaluating surgical patients and patients with specific diagnoses as well as studies not applying a specific screening instrument. For example, Body *et al*[48] performed a study in undifferentiated patients presenting to the ED and asked for reasons of suffering using two face to face questionnaires, without, however use of a validated questionnaire. Importantly, they found that physical and emotional suffering occurred together. Patients' emotional distress was mainly characterised by anxiety and worry. Based on their findings, they concluded that clinicians should focus on providing analgesia and on treating emotional distress, physical symptoms, providing information, care and closure. In addition, research looking at patients with chest pain in the ED found evidence that continued chest pain is related to psychological distress and poor quality of life.[49] Similar to our conclusion, the authors conclude that interventions should be aimed at reducing psychological distress and improving quality of life in such patients.

In summary, this review shows gaps in the current literature and reveals the need for further research with regard to (A) psychological distress in the acute situation, (B) the relationship between distress and medical outcomes, (C) difference in distress across patient populations. Finally, interventional research is needed to answer the question whether screening and treatment of anxiety would result in improved patient outcomes. Particularly, this seems an important question to be answered in light of the fact that several studies found that psychological distress in ED patients is only detected between 2% and 14% by their physicians.[13 14 19] If a causal relationship between psychological distress and adverse clinical outcomes is confirmed in future research, routine screening by the ED staff is indicated to initiate early interventions or treatments in order to improve patient outcomes.

Contributors PS und LF had the idea for this review. LF did the analysis and drafted the manuscript. All authors helped interpret the findings, read and revised the manuscript critically for important intellectual content, and approved the final version of the manuscript.

Competing interests None declared.

Provenance and peer review Not commissioned; externally peer reviewed.

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